
American National Standard
Room Air Conditioners

ANSI/AHAM RAC-1-2008

PREFACE

The Association of Home Appliance Manufacturers develops standards in accordance with AHAM's "Policy and Procedures Governing Technical Standards" which states:

"AHAM Standards shall be in the best interest, mutually, of consumers who use appliances, the industries which provide and service appliances, and other interested parties. They shall relate to actual use conditions, be technically and scientifically sound."

Use or observance of AHAM standards is voluntary.

AHAM standards are presented to the American National Standards Institute (ANSI) for recognition as American National Standards. This reaffirmation of the standard was approved by ANSI on July 7, 2008.

This standard contains

Test procedures that may be applied to any brand or model of room air conditioner. Results of tests in accordance with this standard may be publicly stated.

Recommended levels of performance which are considered important to include but which, necessarily, are recommendations only.

The test results may be compared with AHAM's recommended level of performance, if any, for a particular product characteristic.

With regard to safety, AHAM recommends that all appliance products--both major and portable--manufactured or marketed in the United States be submitted to an appropriate independent laboratory such as Underwriters Laboratories, Inc., or the American Gas Association Laboratories, Inc., for inspection and listing in conformance with the safety standards and procedures followed by such laboratories. The relevant standards for room air conditioners are UL 484, *Room Air Conditioners*, and this standard, ANSI/ AHAM RAC-1, *Room Air Conditioners*.

AHAM welcomes comments and suggestions regarding this standard. Any standard may be reviewed and improved as needed. All standards must be updated or reconfirmed at least every five years. Any interested party, at any time, may request a change in an AHAM standard. Such request should be addressed to AHAM's President, and should be accompanied by a statement of reason for the request and a suggested alternate proposal.

When metric units are not specified, conversion from customary units should be done in accordance with the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE) Metric Practice Guide, and the AHAM SI Metric Practice Guide for the Appliance Industry.

Copyright © 2008 by the Association of Home Appliance Manufacturers (AHAM)
All rights reserved.

The hard copy print version of this document shall be for individual use only.

The electronic file version of this document shall be for storage on one computer for purposes of viewing and/or printing one copy for individual use only.

This document shall not be reproduced in whole or in part by any means, and shall not be transmitted electronically or otherwise to a third person without the prior written permission of AHAM.

CONTENTS

Section	Page
1. PURPOSE.....	1
2. SCOPE.....	1
3. DEFINITIONS.....	1
3.1 Room Air Conditioner.....	1
3.2 Cooling Capacity.....	1
3.3 Moisture Removal Capacity.....	1
3.4 Heating Capacity.....	1
3.5 Recirculated Air.....	1
3.6 Ventilating Air.....	2
3.7 Exhaust Air.....	2
3.8 Standard Air.....	2
3.9 Energy Efficiency Ratio.....	2
4. TESTING CONDITIONS.....	2
4.1 General.....	2
4.2 Test Tolerances.....	2
4.3 Voltage.....	2
4.4 Frequency.....	2
5. STANDARD MEASUREMENT TEST.....	3
5.1 Standard Measurements.....	3
5.2 Standard Test Conditions.....	3
5.3 Nameplate.....	3
6. PERFORMANCE TESTS COOLING UNITS.....	4
6.1 Cooling Capacity Test.....	4
6.2 Moisture Removal Capacity Test.....	4
6.3 Recirculated Air Quantity Test.....	4
6.4 Ventilating Air Quantity Test and Exhaust Air Quantity Test.....	5
6.5 Electrical Input Test.....	5
6.6 Maximum Operating Conditions Test.....	5
6.7 Freeze-Up Tests.....	7
6.8 Enclosure Sweat Test.....	8
6.9 Condensate Disposal Test.....	9
7. PERFORMANCE TESTS HEATING-COOLING UNITS.....	10
7.1 Heating-Cooling Units.....	10
7.2 Heating Capacity Test.....	10
7.3 Electrical Input Test.....	10
7.4 Application Heating Capacity Test.....	10
7.5 Maximum Operating Conditions Test.....	10
7.6 Outside Coil De-Icing Test.....	11
8. SAFETY.....	12

1. PURPOSE

This standard establishes a uniform, repeatable procedure or standard method for measuring specified product characteristics of room air conditioners.

The standard methods and the recommended levels of performance, where they appear, are intended to provide a means to compare and evaluate different brands and models of room air conditioners regarding characteristics significant to product use.

The standard methods and the recommended levels of performance are not intended to preclude the exercise of ingenuity or to prevent improvement and innovation in design and performance.

2. SCOPE

This standard establishes standard methods for measuring performance and includes sections on definitions, test conditions, tests for standard measurements, performance tests, and safety which apply to room air conditioners as defined in 3.1.

Performance tests for Heating-Cooling Units (Section 7) apply to units designed as air-to-air source heat pumps with or without supplementary electric resistance heat. The tests do not apply to units with electric resistance as the only heat source.

3. DEFINITIONS

3.1 Room Air Conditioner.

A room air conditioner is an encased assembly designed as a unit to be mounted in a window or through a wall, or as a console. It is designed primarily to provide free delivery of conditioned air to an enclosed space, room or zone. It includes a prime source of refrigeration for cooling and dehumidification and means for circulating and cleaning air, and may also include means for ventilating and heating.

A packaged terminal air conditioner, a system designed to accommodate various components for heating methods (steam, electric, hot water, etc.) is not considered a room air conditioner.

3.2 Cooling Capacity.

Cooling capacity is a measure of the ability of a unit to remove heat from an enclosed space, room or zone.

3.3 Moisture Removal Capacity.

Moisture removal capacity is a measure of the ability of a unit to remove moisture from an enclosed space, room or zone.

3.4 Heating Capacity.

Heating capacity is a measure of the ability of a unit to add heat to an enclosed space, room or zone.

3.5 Recirculated Air.

Recirculated air is the air discharged by a unit into an enclosed space, room or zone when all ventilating and exhaust dampers are closed.